DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-019458
Date Inspected: 18-Jan-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1500
Location: Job Site

CWI Name: See below

Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as Jacking Frame to Saddle fillet weld (East side), 9W/10W-A, 3W-pp20-W3-2&4 and the following observations were made:

Jacking Frame to Saddle fillet weld (East side)

Upon the arrival of the QA Inspector at 0700 the contractor was setting up to perform the shielded metal arc welding (SMAW) fillet weld joining the jacking saddle (485W HPS) to the saddle (Grade 415 casting). The QA Inspector randomly observed the material was preheated utilizing the induction heating blankets. Upon the arrival of the QA Inspector it was noted the material was preheated to approximately 390ºF. The QA Inspector noted the minimum required preheat was verified utilizing a calibrated temperature indicating laser. The QA Inspector noted the Smith Emery (SE) Quality Control (QC) Inspector Mike Johnson was on site to monitor and record the in process welding. The QC Inspector informed the QA Inspector the fit up was acceptable and ready for production welding. The QA Inspector performed a random visual inspection of the fit up of the vertical weld joint and noted the fit up appeared to be in general compliance with the contract requirements.

The QA Inspector randomly observed the welding was started at 0730. The QA Inspector noted the ABF welder Rick Clayborn was performing the SMAW root pass utilizing 1/8” E9018 low hydrogen electrodes with 125 Amps. The QA Inspector noted the root pass was completed approximately one hour after it was started. After the root pass was completed the QA Inspector observed the ABF welder switch to 5/32” E9018 low hydrogen electrodes. The QA Inspector noted the welder was utilizing 156 Amps, which did appear to be in general compliance with

ABF-WPS-F1205. The QA Inspector noted the second pass or “hot pass” appeared to take approximately one hour. The QA Inspector noted no peening was performed during welding. The QA Inspector randomly performed temperature measurements of the weld joint through out the duration of the welding. It was observed the interpass temperature did not appear to exceed 450ºF during welding, the QA Inspector noted the interpass temperature appeared to be averaged out at 400-420ºF. The QA Inspector noted the vertical fillet weld was completed after 5 passes, at approximately 1500 hours. The QA Inspector randomly observed the SE QC Inspector Mike Johnson perform visual testing (VT) of the completed weld and indicate the effective throat size appeared not to meet the minimum requirements of ABF-WPS-F1205. The QA Inspector noted the ABF welder performed additional welding to achieve the minimum required fillet weld size. After the additional welding was performed the QC Inspector indicated the fillet weld was acceptable. The QA Inspector performed random dimensional measurements and noted the size and or profile appeared to meet the general requirements of the contract documents. The QA Inspector noted the QA Inspector Joselito Lizardo took over observing the set up and post weld heat treating process for the above identified weld joint.

9W/10W-A

The QA Inspector randomly observed the ABF welder identified as Xiao Jian Wan was performing flux cored arc welding (FCAW) of the full length tack weld or seal weld. The QA Inspector randomly observed the SE QC Inspector set the FCAW parameters on a scrap piece of steel. The QA Inspector noted the FCAW parameters were 275 Amps, 22.5 Volts and a travel speed of 355mm/min. The QA Inspector noted the FCAW parameters did not vary from those listed above through out the duration of the QA Inspectors shift. The QA Inspector noted the above identified welder was performing some pick welding of areas that had been removed by grinding. The QA Inspector noted the portions of the weld joint were removed by grinding for informational purposes. The QA Inspector noted Mr. Ieraci had the ABF representatives previously remove section of the tack weld to observe the fit line or fusion line at the bevel preparation. The QA Inspector noted the welding did appear to be complete at the end of the QA Inspectors shift. Mr. Ieraci informed the QA Inspector ABF is only working 8 hours today so the SAW root pass will not be started on this date.

3W-pp20-W3-2&4

The QA Inspector randomly observed the ABF welder Darcel Jackson performing carbon arc gouging and back grinding of the above identified weld joints. The QA inspector randomly observed the ABF welder grind the back gouged weld joints to bright metal. The QA Inspector randomly observed the back gouged weld joints and noted they appeared to be in general compliance with the contract requirements. The QA Inspector randomly observed the SE QC Inspector Mike Johnson perform magnetic particle testing of the back gouged weld joint and noted no relevant indications were present at the time of the testing. The QA Inspector randomly observed the ABF welder continue welding the in process lift lug hole restoration. The QA Inspector noted the weld joint was approximately 70% complete at the time of the SMAW 4G back weld. The QA Inspector randomly observed the ABF welder continue the SMAW fill pass. The QA Inspector randomly observed the SMAW parameters were 1/8” E7018 low hydrogen electrodes with 125 Amps. The QA Inspector noted the parameters appeared to be in general compliance with ABF-WPS-1070A R1. The QA Inspector randomly observed the ABF welder did complete the above identified lifting lug hole on this date. The QA Inspector noted the weld reinforcement was ground flush on the QA Inspectors shift. The QA Inspector observed the grinding did appear to comply with the contract requirements.

Summary of Conversations:

The QA Inspector Joselito Lizardo contacted the Lead QA Inspector Rick Bettencourt at approximately 2000 hours to inform of a loss of power during the post weld heat treatment of the saddle to jacking frame. Mr. Lizardo informed the QA Inspector ABF blew a fuse and power was lost for approximately 1.5 hours. Mr. Lizardo informed the QA Inspector the power was restored and PWHT process was restarted.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Sang Le 916-764-5650, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer